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CHANGES IN THE PATTERN OF INTERSTITIAL HABITATS IN RURAL DENMARK

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Scope

In Denmark agriculture takes up 70% of the total land area. Therefore agricultural changes are a major source of changes in Danish landscapes and important to study in the scope of landscape management.

Statement of the problem

Strong changes are taking place both in the structure and the way of production in Danish agriculture, in a process both of centralization and specialization of the production. The average farm has an increasing size and has an increasingly more uniform (and higher) production.

The impact of these changes on the landscape is a general pressure on the hundreds of thousands of small uncultivated areas (the interstitial habitats) situated in - and between the fields and farms. This conflicts with contemporary rural recreation and more longsighted attempts to maintain a rich and diversified flora and fauna in Denmark.

Survey of previous work

Agriculture as a landscape-forming factor with special reference to the habitats for wild species has hitherto only been studied sporadically and peripherically in Denmark. But today some relevant projects are under way. Mapping of small wetlands in Jutland has been carried out (Jørgensen,79). Government bodies have in relation to the new nature conservation act initiated mapping of the remaining bogs (over .5 ha), ponds (over .1 ha) and small rivers (over 1.5 m width).

The present work

The interstitial habitats (drainage didges, hedges, roadside verges, bogs and ponds) makes up an important fraction of "the nature" in densely populated Denmark. The changes in area and number and an identification of the factor of changes are the objects of this study.

Funded by the university and the Danish Agricultural and Veterenary Research Council the content of all interstitial habitats (above 10 m^2 and below 2 ha) in ca. 15 rural areas (of 4 km^2) in Eastern Denmark are beeing mapped, and the character of each habitat briefly described by field studies. By the use of aerial photographs and old maps the rate and quality of changes are estimated. Interviews with the owners in the chosen areas should give information on the present and previous production and structure on the farms, and information on the present and planned use of the existing habitats.

A pilot-project in two areas (total 18.9 km^2) has shown:

Changes in the number/length of the individual interstitial habitats from late nineties to 1978 in 18.9 km^2 agricultural areas. Zealand area.

	nineties	1978	reduction in %	increase in %
ponds+	197	87	56	-
gravel pits	9	14	-	56
plantations (<2 ha)	0	22	-	.
others	21	25	-	19
total++	227	159	30	
streams	8.8 km	5.2 km	41	-
hedges+++	19.9 -	16.4 -	18	-
roadsides with trees and bushes	1.7 -	.3 -	82	-
drainage didges with trees and bushes	4.6 -	4.4 -	3	-
roadsides without trees and bushes	43.8 -	36.o -	18	-
drainage didges without trees and bushes	28.5 -	8.2 -	71	-
field dikes++++	13.3 -	4.9 -	63	-
total	120.8 km	75.6 km	38%	

+ It was observed that 2/3 of the smaller ponds (<800 m^2) were under filling with garbage, chaff, scrab, stones etc.

++ Plantations consist mainly of Abies planted for production of green twigs and whole trees for christmas decoration. Counted as interstitial habitats the total reduction in numbers has been 30%. In total area however, there have hardly been any changes. But if plantations are categorized as "crops" the reduction in numbers has been 40% and in area 28%.

+++ The reduction in the total length of the original hedges has probably been much higher than the 18% mentioned, as the 16.4 km hedge observed in 1978 includes an unknown amount of former grass covered field dikes, that since are invaded by shrubs in varying degree.

++++Field dikes include only field divides that in the mapping period in the nineties had a height above 3/4 m, and not the field divides below. From aerial photographs it can be seen that the thin uncultivated dividing lines between fields and farms since 1960 have decreased 25% in total length. In 1978 19.6 km remained.

The general impression from the pilot project is that specially wet-areas, the smallest habitats and generally all linear habitats are under hard pressure, and the rate of reduction is increasing.

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